INSECT DISEASE REPORT
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DUTCH ELM DISEASE IN MONTANA

by

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Dutch elm disease was introduced into the United States in 1930. Since then, it has spread from the east coast to the Rocky Mountains and was recently identified in Missoula, Montana. All elms are susceptible. The American elm is the most seriously affected of all elms. The Siberian and Chinese elms are the most disease resistant.

The most obvious symptom of this fungus-caused disease is wilting, curling, and yellowing of leaves on one or more branches. Another symptom is brown streaking in the sapwood of a twig just under the bark. Cross sections show circles or rings of brown spots. Once the fungus is established in the tree, it spreads rapidly through the water-conducting vessels and may kill the tree in one season.

The fungus develops under the bark of dead or dying elm trees in the galleries of a small introduced elm bark beetle which attacks weakened or dead trees. The beetle lays eggs under the bark and a new generation of beetles develops. The new beetles bore through the bark and fly to healthy elms. They carry the spores (reproductive part of the fungus) on their bodies, and while feeding on the healthy elms, the spores are rubbed off and a new infection may take place. Some spread occurs through natural root grafts where trees are close enough together for grafts to form.

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The only positive method of diagnosing Dutch elm disease is to isolate the fungus from infected branches. Specimens for diagnosis should be obtained from actively wilting branches showing discoloration of the sapwood. Collect four to six branch sections, one-half inch in diamater and 6 to 10 inches long from the tree and send to your county agent. Results of the diagnosis will be available in about 2 weeks.

Slowing the spread of Dutch elm disease involves three different but related programs:

1. Community-wide sanitation designed to eradicate the elm bark beetles. This involves the destruction by burning or chipping of all dead or dying elm wood present in the community. The wood can be retained for fireplace use if the bark is removed and destroyed.

2. Prevention of spread through natural root grafts from infected to healthy trees. This involves creating a barrier between diseased and healthy trees by severing or killing the roots either mechanically or chemically. Drill 1-inch diameter holes 24 inches deep and 6 inches apart along lines between trees. Fill the holes with Vapam and seal to prevent loss of fumes. Vapam is currently registered for this use.

3. Chemical protection to prevent healthy trees from being inoculated by beetles during their summer feeding period. A dormant spray of an emulsifiable concentrate of methoxychlor, 2 percent by weight for hydraulic spray equipment and a 12 percent solution for mist blower equipment, will prevent beetle inoculation of healthy trees. Methoxychlor is currently registered for this use.

Another chemical registered as "an aid in control programs" is benomyl (trade name Benlate[4/]) applied as either a foliar spray or trunk injection. Foliar spray is 8 pounds Benlate in 100 gallons of water applied when leaves attain full size. Trunk injection is through injector tubes inserted at 2-inch intervals around tree trunk and filled with a solution made of 2 pounds Benlate in 100 gallons of water and refilled as necessary for 24 to 48 hours when leaves attain full size. Restrictions on the use of Benlate are (1) it can only be applied by a trained arborist, and (2) only in conjunction with a community-wide sanitation and insect control program.

Beware of "tree experts" with "magic cures" for Dutch elm disease. Benlate has been effective in suppressing the disease in already infected trees in a few instances, but it is not presently recommended as a cure. No other chemicals have an effect on Dutch elm infected trees. Do not sign contracts for tree treatments before checking with your county agent.

4/ The mention of a trade name does not imply endorsement by USDA Forest Service.

PESTICIDE PRECAUTIONARY STATEMENT

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key--out of the reach of children and animals--and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, when honey bees or other pollinating insects are visiting plants, or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first-aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equipment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump, or crush and bury them in a level, isolated place.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the Federal Environmental Protection Agency, consult your county agricultural agent or State extension specialist to be sure the intended use is still registered.